

## Claims

1. A high-pressure pump for a fuel injection system of an internal combustion engine, having a drive shaft (12), and having at least one pump element (14), which has a pump piston (20) driven in a reciprocating motion by the drive shaft (12), and a ring (18) is rotatably supported on a portion (16) of the drive shaft (12) disposed eccentrically to the pivot axis (13) of the drive shaft, on which ring the pump piston (20) is braced via a support element (24), characterized in that the ring (18) and/or the support element (24), at least in their contact region, has many microscopic indentations (42); and that a solid lubricant film (40) is applied to the ring (18) and/or to the support element (24), at least in their contact region.
2. The high-pressure pump of claim 1, characterized in that the microscopic indentations (42) have a depth of approximately 2 to 30  $\mu\text{m}$  and/or a width of approximately 15 to 30  $\mu\text{m}$  and/or a spacing from one another of approximately 30 to 150  $\mu\text{m}$ .
3. The high-pressure pump of claim 1 or 2, characterized in that the microscopic indentations (42) are embodied in the form of dimples.
4. The high-pressure pump of claim 1 or 2, characterized in that the microscopic indentations (42) are embodied in the form of grooves.
5. The high-pressure pump of claim 4, characterized in that the grooves intersect.
6. The high-pressure pump of claim 4, characterized in that the grooves are embodied at least approximately in the shape of segments of a circle.

7. The high-pressure pump of one of the foregoing claims, characterized in that the solid lubricant film (40) contains polytetrafluoroethylene and/or graphite and/or molybdenum disulfide.

8. The high-pressure pump of one of the foregoing claims, characterized in that the solid lubricant film (40) has a binder material, in which solid lubricant particles are embedded, distributed uniformly.

9. The high-pressure pump of one of the foregoing claims, characterized in that an adhesion-promoting intermediate layer (44) is disposed between the surface of the ring (18) and/or of the support element (24) and the solid lubricant film (40).